

## **REMARKS**

Claims 1-9, 11-21 are pending in this application. Claims 1, 11, 13 and 14 are amended. Claim 10 has been cancelled, without prejudice. Support for the amendment of claims 1, 11, 13 and 14 can be found, for example, at Fig. 1, Fig. 2 and pages 14-15 of the specification. No new matter has been added. Reconsideration of the pending claims in view of the amendments and the following remarks is respectfully requested. The various issues raised by the Office Action are addressed next in the order in which they appear in the Office Action.

### **102 Rejection**

The Office Action rejected claim 1 under 35 U.S.C. 102 (b) as being anticipated by Koza (US Patent Number 5,742,738) ("Koza"). Applicants respectfully submit that claim 1, as amended, is not anticipated by Koza for at least the following reasons.

Koza teaches using nonlinear genetic processes for problem solving. (See, e.g. col. 15, ln. 54-55.) The genetic process starts with an initial set of programs representing an initial population. Then three possible genetic operations, namely reproduction, crossover and mutation, are performed on selected programs and new programs are created as a result. Then the genetic operations are performed again on programs selected from the new population and another population is generated as a result. These steps are executed repeatedly until a program satisfying certain criteria was found. (See col. 23, ln. 4-col. 24, ln. 8.) Each program or entity in a population may be represented by a tree structure as shown in Fig. 16 of Koza. However, the tree structure only represents a single entity and no where does Koza teach, suggest or disclose a tree structure that represents the relationship between entities, as required by claim 1

Neither does the tree structure of Koza comprises a first structure of nodes interconnected by edges, and a tree comprising a plurality of subtrees, each of which representing one or more nodes in the first structure, as required by claim 1.

Furthermore, Koza's invention is only directed to genetic programs. Thus, the software program entities of Koza are genetic programs only. By contrast, claim 1 as amended requires software programs comprising nongenetic software programs.

It is therefore respectfully requested that the 102 rejection on claim 1 be withdrawn.

### **103 rejections**

The Office Action rejected claims 11-19 under 35 U.S.C. 103 (a) as being unpatentable over Koza in view of Brotsky. It is respectfully submitted that claims 1 and 11-12 are patentable over Koza in view of Brotsky for at least the following reasons.

Claims 11-19 all recite a graph comprising a graph having a first structure of nodes interconnected by edges, said graph further comprising a tree comprising a plurality of subtrees, each said subtree representing one or more nodes in the first structure, the relationship among the plurality of subtrees representing the edges among nodes in the first structure. Neither Koza or Brotsky teach, disclose, or suggest a graph containing such a tree structure.

Moreover, it is first respectfully submitted that Koza and Brotsky are not analogous art and thus cannot be combined to make the 103 rejection. Koza is directed to problem solving using genetic processes, while Brotsky is directed to graph editing tools. The purpose of Koza's tree structure is to represent single program entities during the genetic process. The purpose of Brotsky's Appearance construction graph is to recapture how a picture is edited. Apparently, they serve completely different purposes and Koza and Brotsky are not analogous art.

Accordingly, it is respectfully requested that the 103 rejection of claims 11-19 be withdrawn.

The Office Action rejected claims 20 and 21 under 35 U.S.C. 103 (a) as being unpatentable over Koza in view of US Patent No. 6,108,006 to Hoppe ("Hoppe"). It is respectfully submitted that claims 20-21 are patentable over Koza and Hoppe for at least the following reasons.

It is first respectfully submitted that Koza and Hoppe are not analogous art and thus cannot be combined to make the 103 rejection. Koza is directed to problem

solving using genetic processes, while Hoppe is directed to computer graphics and more specifically to rendering complex geometric models for graphical objects in graphic images (see col. 1, ln. 16-18). Because they serve distinctively different purpose, they cannot be deemed to be analogous.

Furthermore, a person with ordinary skill in the art would see no reason to combine Koza and Hoppe because Koza does not need the Hoppe's complex computer graphic techniques to represent its genetic programs and Hoppe does not need genetic programming process to assist its complex graphic object rendering system.

Accordingly, it is respectfully requested that the 103 rejection of claims 20-21 be withdrawn.

The Office Action rejected claims 2-3 under 35 U.S.C. 103 (a) as being unpatentable over Koza in view of Guy E. Blelloch, "Provably Efficient Scheduling for Languages with fine-Grained Parallelism" ("Blelloch"). It is respectfully submitted that claims 2-3 are patentable over Koza in view of Blelloch for at least the following reasons.

First, it is respectfully submitted that Blelloch does not teach, disclose, or even suggest bi-directionally folding and unfolding a graph between meta and child levels, as required by claims 2-3. Specifically, the disclosure at pg. 301, section 5.4.2 of Blelloch only teaches "dynamically unfolding DAGs" (Directed Acyclic Graphs) whose nodes and edges are created as the program is executed. In other words, nodes and edges of a DAG do not exist until the program is executed. In contrast, the term "unfolding" in claims 2-3 refers to the removal of a meta node on a graph and replacing it with its embedded child graph. Unlike the DAG, the embedded child graph already exists before its parent node is unfolded. Therefore, "unfolding DAGs" as taught by Blelloch is entirely different from "unfolding a meta node" as taught by claims 2-3.

In addition, Blelloch does not teach, disclose or suggest a graph comprising a graph having a first structure of nodes interconnected by edges, said graph further comprising a tree comprising a plurality of subtrees, each said subtree representing one or more nodes in the first structure, the relationship among the plurality of

subtrees representing the edges among nodes in the first structure, as recited by claim 1.

Accordingly, it is respectfully requested that the 103 rejection of claims 2 and 3 be withdrawn.

The Office Action rejected claims 4-9 under 35 U.S.C. 103 (a) as being unpatentable over Koza in view of Perttunen (US Patent Number 6,359,635) ("Perttunen"). It is respectfully submitted that these claims are patentable over Koza and Perttunen for at least the following reasons.

It is first respectfully submitted that Koza and Perttunen are not analogous art and thus can not be combined in a 103 rejection. Koza is directed to problem solving using genetic processes. Perttunen teaches the presentation of categorized information, such as organization charts, in the form of graphs and charts. See, e.g., col. 1, Ins. 7-9. Applicants respectfully submit that the structure and functionality of the two references are distinctively different from one another and thus can not be combined in a 103 rejection. Furthermore, there is no teaching or suggestion in these references to combine.

Next, it is respectfully submitted that like Koza, Perttunen does not teach, disclose, or suggest a graph comprising a graph comprising a graph having a first structure of nodes interconnected by edges, said graph further comprising a tree comprising a plurality of subtrees, each said subtree representing one or more nodes in the first structure, the relationship among the plurality of subtrees representing the edges among nodes in the first structure as required by claim 1. Therefore, the combined teachings of Koza and Perttunen do not render claims 4-9 unpatentable since claims 4-9 ultimately depend from patentable independent claim 1.

Accordingly, it is respectfully requested that all of the Section 103 rejections be withdrawn.

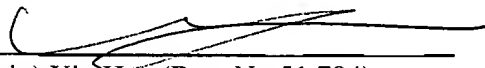
### CONCLUSION

In light of the above, it is respectfully submitted that the present application is in condition for allowance. Favorable disposition is respectfully requested. Should the Examiner have any questions or comments concerning this submission, or any aspect of the application, the Examiner is respectfully invited to call the undersigned at the phone number listed below.

No fee other than the fee for the extension of time is believed due at this time. Should any fees be required, please charge such fees to Morgan, Lewis & Bockius LLP Account No. 50-0310.

Respectfully submitted,

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